Chapter 4

Health and Nutrition

Emerging and Reemerging Issues in Developing Countries

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The benefits of good health and nutrition on economic growth cannot be overstated.

A healthy and nutritionally well-fed population is indispensable for economic growth and development. Health and nutritional status affect the capacity to learn, which in turn determines productivity and economic growth. Evidence from developing countries shows that adult productivity depends to a considerable extent on the contribution health and nutrition during early childhood make to educational attainment. Studies also show that a healthy adult with a nutritionally adequate diet has a higher level of economic productivity in both own-farm production and the labor market than one who eats and keeps less well.

There are many examples of the impact of ill health, which is often tied to the vulnerabilities caused by poor nutrition, on economic outcomes. For example, in Tanzania the average cost of treatment of a single HIV/AIDS infection, including the loss of productivity, is estimated to be between 8.5 and 18 percent of per capita income. Countries with severe malaria outbreaks have an average annual economic growth rate that is 1.3 percent lower than those that do not. Tuberculosis (TB) patients are absent from work three to four months out of the year, forfeiting 20 to 35 percent of annual household income.

Causation, Risks, and Effects

While the interaction of inadequate dietary intake and disease leads to malnutrition, disability, and death, it is also clear that insufficient access to food, inappro-

priate caring practices, a poor environment, inadequate health services, low women's status, and poverty play a major role in catalyzing the whole process. Each of these factors can be a cause, a risk, and/or an outcome; the pathways toward and away from good health and nutrition go in multiple directions.

Take the impact of poverty on HIV/AIDS and TB. Poverty increases the exposure to, as well as the impact of, HIV/AIDS. It diminishes the perceived value of avoiding HIV/AIDS ("we will die soon anyway"), increases the relative costs of preventing and treating the illness, and worsens the impact of weakened immunity because it commingles with a more hostile bacterial and viral environment. Under these circumstances, TB reemerges rather easily, augmenting the negative impact of poverty. Poverty and TB in tandem increase the already deleterious impact of HIV/AIDS on family, friends, community, and state.

Looking at the causal process in reverse, HIV/AIDS and tuberculosis increase poverty in the short to medium run by stripping assets—human, social, financial, physical, natural, informational, and political. Asset rundown leaves individuals, families, and communities more exposed to future health and nutrition shocks. In the meantime, public health resources are increasingly diverted away from prevention and rural primary care to the treatment of HIV/AIDS-infected individuals.

The Global Burden of Disease

The 1996 World Health Organization study of the global burden of disease predicts that deaths from communicable diseases, maternal and perinatal conditions, and nutritional deficiencies (Group I) are expected to decline by more than half, from 34 percent of all deaths due to disease in 1990 to 15 percent in 2020. The projected decrease reflects the overall improvements in Group I conditions brought about by increased income, greater literacy, and progress in the development of antimicrobials and vaccines. The major exception to this trend is HIV/AIDS, for which global mortality is rising rapidly, from 300,000 deaths in 1990 to 2.7 million in 1999.

While Group I conditions as a whole are expected to decline, deaths from noncommunicable diseases (Group II) are expected to rise from 55 percent of all deaths due to disease in 1990 to 73 percent in 2020. In the developing world Group II deaths are expected to climb from 47 percent of all deaths due to disease to almost 70 percent.

HIV/AIDS, Tuberculosis, and Malaria

Today, approximately 36 million individuals are living with HIV/AIDS. Sub-Saharan Africa is the region most affected by this disease. Most, if not all, of the 25 million people in Sub-Saharan Africa infected with HIV/AIDS will have died by

the year 2020, in addition to the 13.7 million Africans already claimed by the epidemic. HIV/AIDS is also spreading dramatically in Asia, which will overtake Sub-Saharan Africa in absolute numbers before 2010. HIV/AIDS has contributed dramatically to exorbitant health care costs, labor shortages, a declining asset base, breakdown of social bonds, loss of livestock, and reliance on crops that are easier to produce but less nutritious and economically valuable. All of these effects contribute to food and nutrition insecurity.

TB is the leading infectious killer of young and middle-aged adults in the world. It causes 26 percent of avoidable deaths in the developing world. TB and HIV/AIDS often conjoin to destroy lives. TB kills 30 percent of AIDS victims in Africa and Asia, and HIV accelerates the progression to active TB by up to one hundredfold. The burden of TB is expected to increase, with 80 million deaths over the next three decades. TB's negative impact on the social fabric of families and their nutrition security is enormous.

Malaria is a major health problem in parts of Asia, Latin America, the Middle East, and the Pacific. However, Africa faces the greatest burden of the disease. Each year 300 to 500 million people become ill with malaria and 1.5 to 2.7 million people die. Ninety percent of this mortality is in Africa, in children under the age of 5. Pregnant women are also severely affected, and so are their developing fetuses. Malaria is on the increase due to insecticide resistance, antimalarial drug resistance, and environmental changes. Because malaria often strikes during harvest time, it can threaten food security and agricultural production.

Intrauterine Growth Retardation, Cardiovascular and Endocrine Diseases, and Obesity

IUGR refers to fetal growth that has been constrained in the uterus. It results in newborns that have not attained their full growth potential and are already malnourished at birth. Recent estimates suggest that about 11 percent of newborns, or 12.6 million infants, suffer from low birth weight at term (the IUGR proxy). Low birth weight at term is especially common in South Central Asia, where 21 percent of newborns are affected. Low birth weight at term is also common in Middle and West Africa.

The "Barker hypothesis," which remains controversial, is founded on the concept that maternal dietary imbalances at critical periods of fetal development affect fetal structure and metabolism in ways that predispose the individual to later cardiovascular and endocrine diseases. This hypothesis may have major implications for public health, especially in developing countries. This is because in the developing world a high proportion of births occur in the birth-weight range with the highest risk of developing adult disease. In addition, the prevalence of risk factors, such as obesity, that might lead to high blood pressure, cardiovascular disease, non-insulin-dependent diabetes, and some cancers is increasing rapidly in some developing countries.

Obesity remains rare in Sub-Saharan Africa and South Asia. But in the more developed countries of Latin America, the Middle East/North Africa, and Central Eastern Europe/Commonwealth of Independent States, obesity in women and children is as common as it is in the United States. Some countries with high levels of obesity still report significant rates of childhood stunting and nutritional deficiencies. The existence of a dual nutrition agenda of obesity and undernutrition presents a difficult challenge because resources are limited.

Aging, Health, and Nutrition

The percentage of the world's population over 60 years old in 1980 was 8.5 percent. It now stands at 11 percent, or 613 million people. By 2020 there will be 1 billion elderly, with 71 percent living in developing countries. The elderly will be susceptible to the health problems traditionally associated with low-income societies, including infections and accidents, and their diet and nutritional status will interact with these conditions. Infections that traditionally produced mortality in early life, such as malaria, TB, respiratory infections, or diarrhea, may reemerge in the lives of the elderly in developing countries.

Neglected Micronutrients

Poorer populations usually consume few animal products, so their intakes of vitamin A, iron, zinc, riboflavin, vitamin B-12, vitamin B-6, and calcium are inadequate. Poor diets may also contain few fruits and a limited variety of vegetables and, therefore, low amounts of beta-carotene, folic acid, and vitamin C. Failure to address the problem of these neglected micronutrients means that a high proportion of the world's population—especially infants, children, women of reproductive age, and the elderly—will continue to suffer the illnesses and debilities associated with this form of malnutrition.

Conclusion

A positive relationship exists between health and nutrition and economic productivity. The benefits of good health and nutrition on economic growth cannot be overstated. But to harness these benefits, the interactions of risk, causation, and consequences among poverty, food insecurity, health, and nutrition need to be understood.